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Wenli Liu

Beijing Normal University

Kali S. Van Campen

University of Arizona, kalivc@email.arizona.edu

Carolyn P. Edwards

University of Nebraska-Lincoln, cedwards1@unl.edu

Stephen T. Russell

University of Arizona, strussell@arizona.edu

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Chinese Parents' Perspectives on Adolescent Sexuality Education

Wenli Liu,¹ Kali S. Van Campen,²
Carolyn Pope Edwards,³ and Stephen T. Russell⁴

1. State Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, Beijing, China

2. Family Studies and Human Development, University of Arizona, Tucson, Arizona, USA

3. Department of Child, Youth, and Family Studies, University of Nebraska-Lincoln, Lincoln, Nebraska, USA

4. Frances McClelland Institute for Children, Youth, & Families, and Family Studies and Human Development, University of Arizona, Tucson, Arizona, USA

Corresponding author — Kali S. Van Campen, MS, Family Studies and Human Development, University of Arizona, McClelland Park 235, P. O. Box 210078, Tucson, AZ 85721-0078, USA; email kalivc@email.arizona.edu

Abstract

There is growing interest in China to understand how young people learn about sexuality, but there are few existing studies about the role of parents as sex educators of their children. This study surveyed 694 Chinese parents of adolescents in three cities about their knowledge, attitudes, and practices regarding sexuality education for their children. The majority supported sexuality education, yet few parents had provided it. High-income parents had more favorable sexual attitudes and, in turn, were more likely to educate children about sexuality. The findings provide insight into parents' role in adolescents' sexual behavior and can be useful to sexuality education professionals.

Keywords: China, sexuality education, sexual attitudes, HIV/AIDS

Introduction

Dramatic economic and social changes in the People's Republic of China (PRC) in recent decades have led to changing attitudes about sexuality and, in turn, new challenges for sexual health, particularly among youth and young adult populations (Pan, 2006; K. Zhang & Beck, 1999). Emerging evidence in PRC indicates that these social changes are shaping sexuality, sexual behavior, and sexuality education. For example, changing attitudes about sexuality have led to increasing numbers of youth who support and engage in premarital sexual activity, with rates of 18% in an out-of-school youth population (Wang et al., 2007) and 16.8% in a university student sample (Hong et al., 1994).

The main concern with this sexual activity is that it often occurs in the absence of formal sexuality education. In one study, young adults answered 50% of HIV/AIDS questions and 25% of contraception questions correctly (Wang et al., 2007); another group of undergraduate students answered on average 15 out of 25 biologically related sexuality questions correctly (He, Tsang, Zou, & Wu, 2010). This lack of knowledge puts youth at greater risk for negative sexual health outcomes such as sexually transmitted infections (STIs). A clear need exists to understand how and from whom young people learn about sexuality. Given that Chinese parents have historically played a primary role in the sex education of children (Liu, Ng, Zhou, & Haeberle, 1997) and are still the primary source of education

about puberty (L. Zhang, Li, & Shah, 2007), this study investigates the knowledge, practices, and attitudes about sexuality and sexuality education of parents in urban China.

During the last 30 years, the One-Child Family Policy has led to a shift from the view of sex for reproduction to sex for pleasure and to greater acceptance of and engagement in premarital sexual activity (Pan, 2006; K. Zhang & Beck, 1999). Several studies have documented this shift: In a sample of out-of-school suburban youth, 60% held favorable attitudes toward premarital sex (Wang et al., 2007), while a study of university students showed that by age 22 years, 69% held permissive attitudes toward premarital sex (Hong et al., 1994). Yet in the context of these changing attitudes, many youth in PRC continue to demonstrate a low level of sexuality-related knowledge, and STI rates have increased among young adults. For example, chlamydia, gonorrhea, and syphilis among Chinese youth and young adults have increased dramatically during the last several decades, with some estimates of rates as high as 15.8% a year (Parish et al., 2003; L. Zhang, Gao, Dong, Tan, & Wu, 2002).

Another reason that sexual health has been a pressing concern in contemporary China has to do with HIV/AIDS (Manchester, 2003). The increased spread of HIV/AIDS has prompted the government to make its prevention a top priority. Since 1998, the HIV/AIDS epidemic has spread to all 31 provinces and municipalities. Nationally, the AIDS epidemic is low in prevalence but concentrated in urban areas: Six provinces reported about 75% of HIV and AIDS cases for the entire country. As of 2009, the national estimate of people living with HIV in China was approximately 740,000; of these, 105,000 were also cases of AIDS (Ministry of Health of the People's Republic of China, 2010). There are indicators that the disease is spreading from high-risk groups to the general population. In the last 5 years, the primary means of transmission has shifted from intravenous drug use to sexual behavior; women now account for nearly one third of new cases. In addition, the number of HIV cases among students and among spouses and children of young women migrating for marriage has shown gradual growth. Overall, the

20- to 39-yearold group has the highest incidence of HIV (about 70%;UNAIDS, 2008). All of these factors have prompted researchers to begin to examine factors that influence STI and HIV transmission, particularly among young people (Wang et al., 2007). Consistent with a focus on prevention, there is growing interest in understanding how adolescents learn about sexuality, including safe-sex practices (L. Zhang et al., 2007).

As a starting point of inquiry, many Chinese social scientists have drawn from Western studies and models of how young people learn about sexuality (Sigley & Jeffreys, 1999). These models are important because they highlight family sexual socialization processes as critical for adolescent sexual health (Fisher, 2004). For example, parents' knowledge, attitudes, and communication about sexuality each have been shown to be linked to positive outcomes for youth, such as delaying sexual activity, using birth control if sexually active, having only one sexual partner, and being less likely to contract STIs (e.g., Aspy et al., 2007; Ford et al., 2005; Hutchinson, Jemmott, Jemmott, Braverman, & Fong, 2003; Jaccard, Dittus, & Gordon, 1996; Meschke, Bartholomae, & Zentall, 2002). Likewise, surveys have shown that both youth and parents want parents to be a main source of sexuality education (Wyatt & Riederle, 1994). In fact, studies of sexuality and sexuality education in the West have been based on an understanding that parents are a primary source of sexuality education for their children, although parents often report discomfort talking about sexuality and may prefer formal institutions such as schools to conduct sexuality education for children (Shtarkshall, Santelli, & Hirsch, 2007). In PRC, parents report similar discomfort talking about sexuality with their children (Liu et al., 1997), but little is known about what Chinese parents know about sexuality, their attitudes about and practice of sex education in the home, and the associations between their knowledge, attitudes, and practices.

A small body of research addresses the role of contemporary Chinese parents in sexuality education of their children. It focuses on what Chinese children learn about sexuality from their parents, and most information is based on studies of youth. For example,

the first and largest nationwide survey of youth about sexuality revealed that parents were not the major source of information about sexuality. Of 6,092 students in 28 regions in 15 provinces, only 11.3% of boys and 30.4% of girls reported getting answers to sexual questions from their mothers; only 17.5% of boys and 7.9% of girls reported getting answers from their fathers (Liu et al., 1997). For all youth in this survey, the most frequent sources of information were medical books (26.1%), magazines and newspapers (21.4%), and fiction (13.1%). In another study, university students identified health and physiology classes, newspapers, and magazines as their main sources of sexual knowledge (Hong et al., 1994). Another sample of university students reported written materials such as magazines, books, health pamphlets, and newspapers; few students (2.8%) ranked parents as potential sources of information about sexuality (Y. Li, Cottrell, Wagner, & Ban, 2004). A fourth sample of 15- to 19-year-olds reported schoolteachers and mass media as the most important sources of sexual knowledge (L. Zhang et al., 2007).

Why might Chinese parents be an infrequent source of sexual information? Some researchers suggest that parents prefer their children to focus on academic studies and defer interest in sex until after graduation from secondary school (Gao, Lu, Shi, Sun, & Cai, 2001). Others suggest that parents are uncomfortable talking about sexuality with their children (Liu et al., 1997). Parents report being unprepared to answer their children's questions, as well as feeling ambivalent about premarital sexual activity (Cui, Li, & Gao, 2001; Liu et al., 1997). In the only known study of Chinese parents' views on sexuality education, parents of unmarried young adults expressed concern for their children's sexual health and believed that the government should provide sexuality education (Cui et al., 2001). At the same time, many of these parents felt that sexuality education should not be provided until a person reached 18 years of age and that the content of sexuality education should differ based on marital status, with more explicit information provided to married youth. These findings suggest that despite changing attitudes about sexuality in recent years, consensus has not been reached about the meaning

of the change or how it should be addressed through education.

Although family planning has been a motivating factor in contemporary sexuality education in China (Liu et al., 1997), most current sexuality education programs for youth have focused on addressing facts about physiology, anatomy, and STI risk reduction, and have paid less attention to contraception and birth control (Pan, 2006; Wang, Hertog, Meier, Lou, & Gao, 2005). At the same time, the small number of existing studies on this topic has identified an overall lack of sexuality education in Chinese elementary and secondary schools (Y. Li et al., 2004; Lou, Wang, Shen, & Gao, 2004). The lack of formal sexuality education is congruent with historical government policy in China: Until the early 1980s, public writing, discussion, and research on sexuality were not officially sanctioned (Sigley & Jeffreys, 1999). Given the key role that parents play in children's sexuality education, it is critical to improve our understanding about Chinese parents' views and behaviors about sexuality and sexuality education.

Purpose of the Study

In the present study, we ask Chinese parents about their knowledge, attitudes, and practices regarding sexuality and sexuality education for their adolescent children within the family context. We focus on three questions:

1. How accurate is parental knowledge about sexuality and sexual health, and how is parents' knowledge associated with their attitudes about sexuality education?
2. How might parental knowledge and attitudes together be associated with parents' own sexuality education of their children?
3. What role do parents' income and education play in parents' sexuality-related knowledge, attitudes, and sexuality education practices?

This last question is motivated by our interest in understanding whether sexual knowledge, in-

come, and education are positively associated with sexual attitudes and the sexuality education of the child. Some scholars posit that China's rapid development of a market economy has been accompanied by more personal freedom of choice around sexuality (Sigley & Jeffreys, 1999; K. Zhang & Beck, 1999). Research also suggests that higher socioeconomic status is associated with greater access to sexual resources and an open attitude toward sex (Gonzales&Rolison, 2005) and greater knowledge of HIV (Manchester, 2003). Therefore, parents with higher socioeconomic status may have greater sexual information and be more open to educate their children about sexuality. From parents' responses, we hope to gain insight into factors that might be associated with parents' education of their children regarding sexuality.

Method

Sampling Method

To obtain information about Chinese parents' knowledge, attitudes, and practices regarding sexuality and sexuality education for their adolescent children, cross-sectional data were collected in three cities (Beijing, Xi'an, and Shanghai) during February 2000 in PRC. These cities are among the largest in PRC. As of 2007, China's largest city, Shanghai, which is located in the Southeast, had a population of 18.2 million with 18 districts. The Northeastern city of Beijing had a population of 17.4 million with 16 districts. Xi'an, located in North-Central China, had a population of 8.6 million with 9 districts. The three cities were selected using convenience sampling, based on limited resources and availability of individuals in those cities to assist in data collection. However, a two-stage cluster random-sampling strategy was used: one middle school classroom (Grades 6, 7, 8, and 9) and one high school classroom (Grades 10, 11, and 12) were randomly selected from each district, and then one or two classes from each grade were randomly selected. In total, data were collected in 151 middle schools and 156 high

schools in Beijing, 158 middle schools and 146 high schools in Xi'an, and 114 middle schools and 116 high schools in Shanghai.

Questionnaires were completed by parents of children in either middle school or high school. Students took home questionnaires in sealed envelopes. Because data collection was supported by the principals of the schools, and the head teacher of each class assisted in distributing and collecting the questionnaires, we are not aware of any child who refused to bring the questionnaires to their parents. The envelopes contained information about the study, instructions, and an invitation for one parent to participate voluntarily. The willing parent had 1 week to complete the questionnaire at home and mail it directly to the researchers. The surveys were completed throughout February 2000. The dates and times of data collection for each school varied throughout the month. Data were collected from urban versus rural areas for several reasons. Pragmatically, schools in urban settings were an easier venue for recruiting larger numbers of parents. Further, parents in rural areas tended to be less educated (National Bureau of Statistics of China [NBSC], 2005), and there were concerns about the ability of typical rural parents to complete the survey instrument. It was also the case that rural parents were less likely to discuss sexuality with children (Liu et al., 1997) and that there was less knowledge regarding HIV in rural compared with urban areas (Manchester, 2003). Thus, the study cannot be said to be representative of PRC parents beyond these urban centers.

A total of 960 copies of the questionnaire were distributed, and 877 copies were returned (91%). After eliminating cases due to rural residence ($N = 4$) or incomplete or missing data on key variables used in the analyses, the final analytic sample size was 694 (79% of those returned). Participants were parents who had a child between the ages of 11 and 19 years old ($M = 14.9$; $SD = 1.7$). Only 1 parent in a family (either mother or father) answered the survey questionnaire, resulting in a sample that included 43.2% fathers and 56.8% mothers, with a mean age of 42.6 years. The sample for our analyses included 252 parents from Beijing, 255 parents from Xi'an, and 187 parents from Shanghai.

Measures

The questionnaire was developed by drawing on measures from Western scholars and knowledge from the Chinese research team. English-language measures were then translated into Chinese by an independent translator. The translations were back-translated from Chinese to English by a second translator who was fluent in both Chinese and English to ensure the accuracy of the wording. Following are all the single-item and multiple-item measures used in the present study.

Sociodemographic information

Participants reported their age, gender, highest educational attainment, current marital status, monthly family income (monthly income in U.S. dollars, converted from RMB Yuan), child's gender, child's age, number of school years of their child, and total number of children.

Sources of sexual knowledge

Parents were asked to identify their most frequent source of sexual knowledge: their own parents, schools, newspapers, radio, professional journals, friends, colleagues, television, and other. They were also asked how often they talked with their spouse about sexuality (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always).

Parental knowledge about sexuality

Two subscales about sexual knowledge were created to determine the amount of accurate information parents had about reproductive development and HIV/AIDS. Seven items were taken from Hockenberry-Eaton and Richman's (1996) study on mother and adolescent knowledge of reproduction: Participants identified correct definitions in a series of multiple-choice questions about ovulation, wet dreams, menstruation, ejaculation, semen, hormones, and fertilization. Parents were asked to choose the correct answer from three to four possible choices. Questions were coded as follows: 1

= correct, 0 = incorrect. To determine knowledge about HIV/AIDS, three items were taken from V. C. Li et al.'s (1992) study on Chinese health professionals' knowledge about HIV/AIDS. Participants responded to the following statements (true, false, unsure): "AIDS is caused by bacteria," "A pregnant woman who has HIV can give the virus to her baby," and "Looking at a person is enough to tell if that person is HIV infected." Questions were coded as follows: 1 = correct, 0 = incorrect or unsure. The items for each subscale were summarized to obtain a total number of correct answers. The possible range of correct scores about reproductive knowledge was 7, and about HIV knowledge was 3. Higher scores indicated higher levels of sexual knowledge.

Parental attitudes about sexuality and sexuality education

Two questions were taken from Bloch's (1979) study on attitudes of mothers toward sexuality education; the remaining questions were developed by the first author and her research assistants based on their cultural knowledge of Chinese parents. Parents responded to statements such as: "Parents should be the first teachers about sexuality education for their children," "Parents should not tell children about intercourse and contraception until children are ready for marriage" (reverse coded), and "Teaching knowledge about sexuality in school is as important as teaching reading, writing, and arithmetic." A total of 14 items were rated using a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = not sure, 4 = agree, 5 = strongly agree). Five items were reverse coded; higher scores indicated attitudes in support of sexuality education for youth. Reliability analysis revealed an alpha of .71.

Parental sexuality education of children

Parents were asked whether they had educated their child about sexuality (1 = yes, 0 = no). Parents with sons were asked whether they had taught their sons to clean their penis, and parents with daughters were asked whether they had taught their

daughters about menstruation before menarche (1 = yes, 0 = no). Parents were also asked four questions about what they needed to educate their child about sexuality (1 = checked, 0 = unchecked; responses included, "Help me change my attitudes toward sexuality education," "Give me knowledge about sexuality," "Tell me how to talk about sexuality," "Other").

Plan of Analyses

We begin with descriptive analyses that document parents' sociodemographic information, the degree of their sexual knowledge, their attitudes toward sexuality and sexuality education, and their sexuality education behavior with their children. We then present correlations among parents' sociodemographic characteristics and their sexual knowledge, attitudes, and behavior. Next, we use multivariate regression to examine whether sociodemographic characteristics predict sexual knowledge and whether together these factors predict attitudes about sexuality and sexuality education. Finally, logistic regression is used to examine whether background characteristics, knowledge, and attitudes predict whether parents educated their child about sexuality. We used Sobel's (1982) product-of-coefficients approach to evaluate any indirect effects on sexuality education (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002).

Results

Descriptive Information

The parents' sociodemographic characteristics are described below. All variables met with assumptions of normality. Nearly all of the participants (95.6%) were married; 3.5% were divorced; and 0.7% were separated. The majority had a high school education and some college, with fathers reporting a mean number of 13.5 years and mothers reporting a mean number of 13.4 years of formal

schooling. Most parents (92.1%) had a single child, 52.9% boys and 47.1% girls. One third (36.3%) of the children were aged 11 to 13 years old; 50.7% were aged 14 to 16 years old; and 13.0% were aged 17 to 19 years old; the children were evenly divided between middle and high school. The majority of parents identified themselves as factory workers (44.1%); other occupations included government officers (10.1%), business persons (14.8%), or self-employed (12.7%). Approximately 23.3% of parents reported their mean monthly family income to be under RMB 1,000 (U.S. \$146); the majority (67.2%) reported a mean monthly income of RMB 1,000 to 3,000 (U.S. \$146 to \$440), 8.2% ranged from RMB 3,100 to 5,000 (U.S. \$440 to \$733); and 1.3% reported earning more than RMB 5,000 (U.S. \$733). Based on the annual income in PRC (Bloomberg Businessweek, 2007), the sample would be considered mostly lower- to middleclass income.

The source of parents' knowledge of sexuality came mostly from professional journals (43.2%), newspapers (18.5%), and friends (12.0%), but also from schools (9.2%), radio (4.4%), television (3.7%), and their own parents (3.1%). Only 0.4% said the source was their spouse. Nearly two thirds (60.6%) of parents reported rarely or never speaking to their spouse about sexuality, although husbands (48.3%) were more likely to say they talked to their wives (compared with wives' reports of 32.6%; $p < .001$). In terms of sexuality-related knowledge accuracy, fathers' and mothers' reports were similar (see Table 1). More than half (58.5%) knew at least five correct answers out of seven (71.4%) for reproductive knowledge; a majority of parents (65.3%) knew at least two correct answers out of three (66.7%) HIV/AIDS questions.

In terms of attitudes, parents were generally supportive of sexuality and sexuality education for children ($M=3.7$). Specifically, most participants (79.6%) agreed that parents should be the first teachers about sexuality education for their children, 73.3% thought that parents should be more responsible than schools in providing sexuality education for their children, and 87.8% believed that sexuality education would help teach children to be more responsible about sexual behavior. Further, a majority

Table 1. Percentage of Correct Responses on Reproductive and HIV/AIDS Knowledge

Terms	% Correct	% Fathers	% Mothers
Ovulation	85.9	86.3	85.5
Wet dreams	86.2	85.7	86.6
Menstruation	77.1	76.8	77.4
Ejaculation	93.8	94.6	93.0
Semen	64.3	66.8	61.8
Hormones	76.6	78.6	74.5
Fertilization	21.8	19.5	24.0
AIDS cause	46.6	44.0	49.1
AIDS transmission	89.0	88.6	89.3
AIDS appearance	69.3	67.5	71.1

of parents (85.8%) supported teaching children about AIDS prevention in schools. Yet parents' attitudes seemed ambivalent regarding teaching children about contraception. Slightly more than half (56.7%) agreed with waiting until children were ready for marriage to tell them about intercourse and contraception, and only 39.6% thought that children should learn about contraception in school. As far as gender differences, both genders were generally supportive of sexuality education; however, fathers held significantly more favorable attitudes for 3 out of 14 (21.4%) questions ($p < .01$), and mothers held 1 (0.07%) more favorable attitude than fathers ($p < .05$).

In spite of agreement that parents should be the first teachers about sexuality, most parents (83.6%) said they had not educated their children about sexuality, although mothers (20.8%) were twice as likely than fathers (10.7%) to have done so ($p < .001$). Only 9.9% of parents with sons (367) said they had told their son how to clean their penis, and only 17.3% of parents with daughters (327) said they had told their daughter about menstruation before menarche. For the majority of parents (81.43%), their primary need regarding sexuality education was skills for talking with their children about sexuality; 10.25% said their primary need was more knowledge about sexuality, while 6.8% said their primary need was help changing their attitudes toward sexuality education.

Finally, we conducted one-way analyses of vari-

ance to examine similarities and differences between characteristics of parents in each city. There were significant differences in only three characteristics: The grade of each parent's child was higher in Xi'an ($M = 3.55$, $SD = 1.72$, $p < .001$) than in Beijing ($M = 2.55$, $SD = 1.50$) and in Shanghai ($M = 2.57$, $SD = 1.50$). Parents' level of income was highest in Shanghai ($M = 1.13$, $SD = 0.58$, $p < .001$), followed by Beijing ($M = 0.96$, $SD = 0.55$) and then Xi'an ($M = 0.60$, $SD = 0.54$). Although on average parents' attitudes toward sexuality and sexuality education were generally similar, they were statistically higher (more supportive) in Beijing ($M = 3.73$, $SD = 0.40$, $p < .001$), followed by Shanghai ($M = 3.66$, $SD = 0.40$), then by Xi'an ($M = 3.59$, $SD = 0.44$). Given these differences, we controlled for city of residence in multivariate analyses.

Statistical Analyses

Correlations of our key study variables are presented in Table 2. The correlation between parental income and education was significant but weak. There were significant but weak correlations between both indicators of socioeconomic status and sexual knowledge, attitudes, and sexuality education, with one exception: Parental income was not significantly correlated with reproductive knowledge. The two forms of sexuality-related knowledge (regarding reproduction and HIV/AIDS) were moderately correlated; otherwise, the correlations among sexual knowledge, attitudes about sexuality and sexuality education, and sexuality education of children were significant but generally weak.

Multivariate regression analyses (Table 3) revealed that parents of sons and parents with higher education had more reproductive knowledge (Model 1); mothers and parents with higher education had more HIV/AIDS knowledge (Model 2). However, both forms of sexuality-related knowledge and parental income predicted supportive attitudes regarding sexuality education (Model 3). Consistent with the descriptive results, participants from Beijing reported more supportive attitudes toward sexuality education (compared with participants from Xi'an). The fi-

Table 2. Correlations of Sociodemographic Characteristics, Knowledge, and Attitudes

	Income	Education	Reproductive Knowledge	HIV/AIDS Knowledge	Sexuality Education
Education	.20***				
Reproductive Knowledge	.11	.21***			
HIV/AIDS Knowledge	.05**	.10**	.32***		
Sexuality Education	.09*	.09*	.14***	.09*	
Sexual Attitudes	.24***	.12**	.20***	.17***	.24***

* $p < .05$; ** $p < .01$; *** $p < .001$

nal models (4 and 5) used logistic regression to predict parental sexuality education of children. Model 4 showed that mothers and parents with more reproductive knowledge were more likely to report that they educated their child about sexuality. Model 5 included the measure of sexual attitudes and showed that the measure of favorable attitudes about sexuality and sexuality education was the strongest predictor of whether parents had educated their child about sexuality; the effects of parental gender and reproductive knowledge remained significant.

These results pointed to some possible mediating processes; we tested for indirect effects with the product-of-coefficients method (Sobel, 1982). Logistic regression analyses revealed that the association between reproductive knowledge and parents' sexuality education of children was accounted for by sexual attitudes ($z = 3.14$, $p < .01$; see Figure 1). The proportion accounted for (as calculated by the formula $a\beta/c$) was 23%. Likewise, favorable

sexual attitudes accounted for the association between parents' income level and sexuality education of children ($z = 4.14$, $p < .001$). The proportion accounted for was 68%. Thus, higher levels of both reproductive knowledge and income were associated with more favorable attitudes toward sexuality and sexuality education, which in turn strongly predicted parents' sexuality education of children.

Discussion

To our knowledge, this is the first empirical study of Chinese parents' perspectives on sexuality and sexuality education for adolescents in the family context. In our sample, the majority of parents supported sexuality education for their children and believed that parents should be the first source of that education; however, only a minority of parents actually taught their children about sexuality. This finding is consistent with studies that show that most Chinese young people report getting their sexual information from sources other than their parents (e.g., Liu et al., 1997). Another important finding is that parents' reproductive knowledge predicted their attitudes about sexuality and sexuality education, and in turn, their sexual attitudes predict whether they educated their children about sexuality. This finding supports other evidence that with more knowledge and confidence, parents are more likely to talk about sexuality with their children (see Dilorio, Pluhar, & Belcher, 2003, for a review).

The majority of our sample had somewhat accurate knowledge about reproduction. They were a bit more knowledgeable about HIV/AIDS, a finding consistent with research on public HIV/AIDS knowledge,

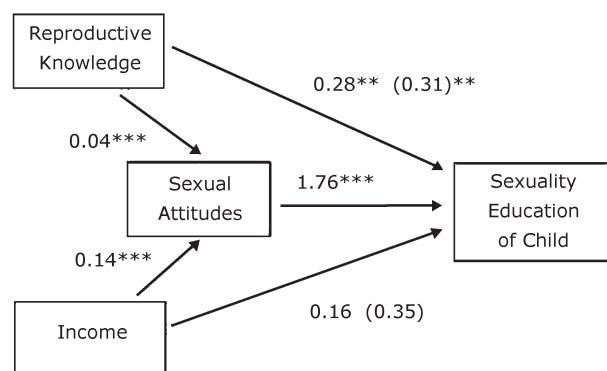


Figure 1. Using unstandardized regression coefficients, we found that sexual attitudes indirectly explain the association between reproductive knowledge and sexuality education (Sobel's $z = 3.18$, $p < .01$), and the association between income and sexuality education (Sobel's $z = 3.78$, $p < .001$). ** $p < .01$; *** $p < .001$

Table 3. Multivariate and Logistic Regression Results

	Model 1: Reproductive Knowledge	Model 2: HIV/AIDS Knowledge	Model 3: Sexual Attitudes	Model 4: Sexuality Education	Model 5: Sexuality Education
Parent gender (1 = female, 0 = male)	-0.01	0.12	-0.07*	0.44(0.27-0.71)**	0.37(0.23-0.61)***
Child gender (1 = female, 0 = male)	-0.18	-0.05	0.01	0.89(0.58-1.38)	0.88(0.56-1.37)
Child grade	0.03	0.01	-0.01	1.12(0.99-1.28)	1.12(0.97-1.29)
Education	0.28***	0.03	0.01	1.04(0.81-1.34)	1.01(0.78-1.30)
Income	0.18	0.04	0.14***	1.43(1.00-2.08)	1.18(0.79-1.74)
HIV/AIDS knowledge	0.51***	—	0.05**	1.15(0.88-1.50)	1.60(0.80-1.40)
Reproductive knowledge	—	0.18***	0.04***	1.37(1.14-1.65)**	1.33(1.09-1.62)**
Shanghai	-0.13	-0.10	0.02	0.97(0.53-1.76)	0.96(0.51-1.80)
Beijing	-0.08	-0.01	0.10**	1.22(0.72-2.07)	1.11(0.63-1.93)
Sexual attitudes	—	—	—	—	5.83(3.61-10.48)***
Adjusted R^2	.14***	.10***	.11***	—	—
Overall χ^2				34.70***	59.97***

Unstandardized ordinary least square regression estimates are shown for Models 1, 2, and 3. Odds ratios with 95% confidence intervals are shown for Models 4 and 5.

* $p < .05$; ** $p < .01$; *** $p < .001$

attitudes, and behavior in PRC (Ministry of Health, 2010). That is, partly as a result of government awareness-raising activities, the level of basic AIDS awareness among parents throughout China, and especially among urban residents, is fairly high.

Most parents favored sexuality education for children. Further, many believed that parents, not schools, should take primary responsibility for that education; yet the large majority of parents did not educate their children about sexuality. In addition, parents supported HIV/AIDS education in schools but not instruction about contraception. This finding is consistent with the one existing study on parents' views of sexuality education for children, which found that parents want to prevent HIV/STI risk in their children but do not want to condone sexual activity, so they support education for risk prevention but not for contraceptive methods (Cui et al., 2001). Studies of school sex education programs in China also reveal a strong focus on sexual physiology and risk prevention but often little to no instruction on contraceptive methods and alternatives to sexual activity (Wang et al., 2005). This concern about the possibility of encouraging sexual behavior among youth during sexuality education instruction needs to be addressed by professionals who design and implement sexuality education programs for young people and for parents.

The fact that almost all parents said they needed help talking with their child about sex, and that many felt they needed more sexual knowledge, resonates with Liu et al.'s (1997) study, which also showed that parents felt unprepared to talk with their children about sexuality. Parents' discomfort with talking about sexuality may be due to their average age (42 years), indicating that most would have grown up before the dramatic social reforms of the early 1980s that led to shifts in sexual attitudes and officially sanctioned public discourse on sexuality (Pan, 2006); this age group would be less likely to have experienced and felt comfortable talking about sexuality with each other and their children. Indeed, only 3% had discussed sexuality with their own parents; clearly, few have personal experience with parent-child communication about sexuality.

It is also important to note that mothers were more likely than fathers to educate their children about sexuality. This finding is consistent with the historical role of mothers in China to shoulder primary responsibility for contraception use and family planning (NBSC, 2005). In fact, 80% of people surveyed still continue to believe that mothers should take on that role, which has important implications for sexuality education programs for parents. Finally, the finding that parents with higher levels of income were more likely to provide sexuality education to their children is important to consider. The association between income and sexuality education was largely explained by these parents holding more supportive attitudes about sexuality and sexuality education. This finding is consistent with studies in the West, in which social class has been a strong predictor of whether people have favorable attitudes toward sexuality (Gonzales & Rolison, 2005). The majority of our sample consisted of fairly educated Chinese parents with low- to middle-class incomes; notably, education level did not predict sexual attitudes or sexuality education of children, but income level did. Given the economic changes in contemporary PRC, these results may partly be due to the opportunities that greater financial resources, but not necessarily higher educational attainment, afford in terms of more exposure and access to changing sexual norms in PRC (Uretsky, 2008). The impact of this increased economic status on parents' sexual attitudes and sexuality education practices needs further exploration. Given that a majority of parents reported that they received their sexuality education from nonacademic and nonscientific sources, one way to enhance parents' sexual knowledge is to provide accurate information to magazines and newspapers.

The findings must be interpreted with the limitations of the study sample in mind: The sample was largely low to middle class, urban, and fairly educated, and the data came exclusively from parental reports. The results cannot be generalized beyond Chinese urban families, and it is unclear how representative parents in these cities might be in comparison to other urban centers in China. Fur-

ther, the question about sources of sexuality education asked parents to choose only the most important source, yet parents could have multiple ways that they learn about sexuality; allowing parents to choose multiple sources would provide a more nuanced understanding of how parents learn about sexuality. Finally, although a number of the key measures were taken from prior studies conducted in China (parental knowledge about sexuality), others (parental attitudes about sexuality and sexuality education, and parental sexuality education of children) were constructed from items that were available in this study. The multivariate results are based on a single dichotomous measure of parents' sexuality education of children; future studies could incorporate measures that have been used in other populations.

In spite of these limitations, the results are the first of their kind that provide a unique vantage point regarding parental knowledge, attitudes, and needs in contemporary PRC; they could be useful for HIV/AIDS intervention professionals. Certainly, parents are perceived to be important conveyors of sexuality education, as is true in Western countries like the United States. And in the United States, adolescent sexuality education programs increasingly include parents in their activities due to the strong association between parents' efforts and adolescent sexual behavior (Meschke et al., 2002). In China, parents likely play an equally strong role in adolescents' sexual behavior. An understanding of parents' sexual knowledge, attitudes, and practices, and how attitudes influence sexuality education practices, can provide insight into effective designs and implementation of sexuality education programs and interventions.

Finally, the Chinese government has an important role to play in developing policies that give greater priority to sexuality education for children in the family. Government agencies need to provide technical assistance in the development, implementation, and evaluation of sexuality education programs for parents to learn about knowledge and skills for effectively educating their children about sexuality and sexual health. In addition, given that parents' primary source of sexuality education in

our study was professional journals, publishers of sexuality education material could support parents by translating and publishing well-received English journals and books about sexuality education in the family into Chinese; they could also provide support for sexual health professionals in PRC to write journal articles and books for parents about sexuality education. These efforts could go a long way to increase parents' knowledge, skills, and support of sexuality education of children in the family context.

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